DOCUMENT RESUME

ED 364 199 IR 016 283

AUTHOR	Lajoie, Susanne P., Ed.; Derry, Sharon J., Ed.
TITLE	Computers as Cognitive Tools.
REPORT NO	ISBN-0-8058-1082-X
PUB DATE	93
NOTE	401p.
AVAILABLE FROM	Lawrence Erlbaum Associates, 365 Broadway, Hillsdale, NJ 07642 (paperback: ISBN-0-8058-1082-X, $32.50; clothbound: ISBN-0-8058-1081-1, $79.95).
PUB TYPE	Books (010) -- Collected Works - General (020)
EDRS PRICE	Document Not Available from EDRS.
DESCRIPTORS	Artificial Intelligence; Biology; *Cognitive Processes; *Computer Assisted Instruction; Cooperative Learning; *Educational Technology; Exploratory Behavior; Feedback; Futures (of Society); Geometry; *Learning; Learning Theories; Models; Problem Solving; Tutors; Writing (Composition)
IDENTIFIERS	Challenge; Coaching; Examples; Intelligent Tutoring Systems; *Learning Environments

ABSTRACT

This book provides exemplars of the types of computer-based learning environments represented by the theoretical camps within the field and the practical applications of the theories. The contributors discuss a variety of computer applications to learning, ranging from school-related topics such as geometry, algebra, biology, history, physics, and writing, to the more technical domains of electronics and avionics. The following papers are included: (1) "Reifying Implicit Planning in Geometry: Guidelines for Model-Based Intelligent Tutoring System Design" (Kenneth R. Koedinger and John R. Anderson); (2) "A Comparison of Learning Environments: All that Glitters..." (Valerie J. Shute); (3) "Motivational Techniques of Expert Human Tutors: Lessons for the Design of Computer-Based Tutors" (Mark R. Lepper, Maria Woolverton, Donna L. Mumme, and Jean-Luc Gurtner); (4) "Local Cognitive Modeling of Problem-Solving Behavior: An Application of Fuzzy Theory" (Sharon J. Derry and Lois W. Hawkes); (5) "Tutoring Systems and Pedagogical Theory: Representational Tools for Understanding, Planning, and Reflection in Problem Solving" (Kurt Reusser); (6) "On the Nature of Pedagogic Computer Tools: The Case of the Writing Partner" (Gavriel Salomon); (7) "Authors of Knowledge: Patterns of Hypermedia Design" (Richard Lehrer); (8) "Constructing a Joint Problem Space: The Computer as a Tool for Sharing Knowledge" (Stephanie D. Teasley and Jeremy Roschelle); (9) "Computer Environments as Cognitive Tools for Enhancing Learning" (Susanne P. Lajoie); (10) "The Role of the Tutor in Computer-Based Collaborative Learning Situations" (Sandra Katz and Alan Lesgold); (11) "The Discovery and Reflection Notation: A Graphical Trace for Supporting Self-Regulation in Computer Based Laboratories" (Leona Schauble, Kalyani Raghavan, and Robert Glaser); (12) "Gazing Once More into the Silicon Chip: Who's Revolutionary Now?" (Susan F. Chipman); and (13) "Information Technology and the Future of Education" and (Alan Lesgold). Author and subject indexes are included, and all of the papers contain references. (KRN)